

## EFFECT OF USING RICE HUSK ASH AS PARTIAL REPLACEMENT OF CEMENT ON PROPERTIES OF FRESH AND HARDENED CONCRETE

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### Abstract

Rice husk disposal has become a great challenge for Pakistan being one of the largest rice producer across the globe. Rice Husk Ash (RHA) contains sufficient pozzolanic properties which opens up opportunities for its usage as cementitious material as partial replacement of Ordinary Portland Cement (OPC). In this research RHA was added as cement replacement in different percentages by weight of cement i.e. 0%, 6%, 12%, 18% and 24% at constant mix ratio of 1:2:4 and water-cement ratio of 0.6 that is M15 grade concrete with a target strength of 15-20 MPa. The properties of concrete like workability, compressive strength, tensile strength, flexure strength, and water permeability were investigated by casting standard concrete samples in the form of cubes, cylinders and beams in addition to cost comparison study. The outcomes show that workability of fresh concrete increases with an increase in RHA content and almost all concrete properties studied in this research gave more favorable results at 6% replacement level compared with the control mix.

**Keywords:** Rice Husk, Pozzolana, Brick kiln, Workability, Tensile strength, Compressive strength, Permeability, Flexural strength.